



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,628	06/01/2001	Thomas A. Isenburg	884.444US1	1711

7590

07/25/2002

Schwegman, Lundberg, Woessner & Kluth, P.A.
P.O. Box 2938
Minneapolis, MN 55402

EXAMINER

DATSKOVSKIY, MICHAEL V

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 07/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,628

Applicant(s)

ISENBURG, THOMAS A.

Examiner

Michael Datskovsky

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 June 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the connectors (locking pins) having the first end attached to the mounting plate and the second end securable to the circuit board (claims 1 and 25) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 6, 11 and 24-25 are objected to because of the following informalities: In claim 6, line 1: word "sizeable" should be substitute by word: "slidable"; In claim 11, line 2: the term: "hard-mounted" and in claim 24, lines 1-2: the term: "bench top fixtures" either were not used or explained in the specification and must be substituted by the terms which are more close to the specification. In claim 25, line 2: Step comprising: "placing a mounting plate on top of a circuit board", according to the description and drawings of the structure, should be changed to: "placing a mounting plate on top of a processor" (or a socket package). Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 2835

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1 and 25 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Neither in the description nor in the drawings applicant has described or shown the connectors (locking pins) having the first end attached to the mounting plate and the second end securable to the circuit board (a structure without a backing plate).

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6, 14, 19-33 (claims 1 and 25 as best understood by examiner) are rejected under 35 U.S.C. 102(b) as being anticipated by Kehley et al.

Kehley et al teach an apparatus, figs.1-10, for attaching a passive thermal solution to a circuit board and to a package, comprising: a mounting plate 90 having a mounting plate opening 98 designed to allow the passive thermal solution (heat sink 70) to contact a processor 60 located in a socketed package secured to a circuit board 30; a backing plate 20 connected with the mounting plate 90 with a plurality of connectors (locking pins 241, 242, said connectors each having a first end secured to the slot 94 in the mounting plate 90, and the second end secured to the backing plate 20, wherein

Art Unit: 2835

said backing plate 20 is designed to prevent flexure of the circuit board 30, and said connectors slide through the holes 34 in the circuit board are designed to keep the mounting plate 90 in contact with the processor 60. Kehley et al teach furthermore: said mounting plate 90 comprises four keyhole shaped slots 94 and four corresponding locking pins 241, 242 insertable therein, each slot 94 having an angled shelf 947, fig.5, along which a boss 225 of the locking pin 242 can slide, whereby creating a predetermined amount of pressure imparted to the processor 60, wherein pressure on the processor increases as the locking pins slide along the shelves in a downwardly direction. Kehley et al also teach that said processor can be attached permanently or temporary for testing purposes or further reusing (col.1, lines 48-57; and col.3, lines 24-48). Regarding to the claims 25-33: The method steps are necessitated by the device structure as Kehley et al show it.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehley et al.

Regarding to the claims 15-17: Kehley et al teach all the limitations of the claims except said circuit board is less than 1,5 mm in thickness and 30 watts of power is removable by the heat sink near a temperature of about 100° C; or said circuit board is greater than

Art Unit: 2835

1,5 mm in thickness and 50 watts of power is removable by the heat sink near a temperature of about 100° C. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a range of sizes of a circuit board and cooling structure, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding to the claim 18: Kehley et al teach all the limitations of the claim except said mounting plate, backing plate and connector each made from a material selected from a group consisting of aluminum, steel and plastic. It would have been obvious to one having ordinary skill in the art at the time the invention was made to *make these parts* from a group consisting of aluminum, steel and plastic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

9. Claims 7-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehley et al in view of McCullough et al.

Regarding to the claims 7-9 and 11-12: Kehley et al teach all the limitations of the claims except said heat sink has a threaded base engageable with threads in the mounting plate opening. McCullough et al teach an apparatus 100, fig.2, for attaching a thermal solution to a circuit board and to a package, comprising: a mounting plate 146 having a mounting plate threaded opening 142 designed to allow the thermal solution (heat sink 120) to contact a processor 135 located in a socketed package secured to a

Art Unit: 2835

circuit board 112; said circuit board 112 connected with the mounting plate 146 with a plurality of connectors (locking pins 126), said connectors each having a first end secured to the mounting plate 146, and the second end secured to the circuit board 112, wherein said heat sink 120 has a threaded base 121 engageable with threads in the mounting plate opening 142. It would have been obvious to one skilled in the art at the time invention was made to employ a heat sink screwed in a mounting plate as it is shown by McCullough et al in the device by Kehley et al in order to simplify assembling and disassembling of the device. Regarding to the claims 10 and 13: Kehley et al teach all the limitations of the claims except said the pressure imparted to the processor is about 345 to 690 kPa. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a range of pressure on the processor, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Mira (US Patent 5,662,163); Mann (US Patent 6,404,634); Chan et al (US Patent 5,730,620); Plesinger (US Patent 5,132,875) and Loo et al (European Patent EP0637079A1).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Datskovsky whose telephone number is (703) 306-4535. The examiner can normally be reached on Mn - Fry 8 - 4:30.

Art Unit: 2835

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (703) 308-4815. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Patent Examiner

Michael Datskovsky

A handwritten signature in black ink, appearing to read "Michael Datskovsky", written in a cursive style.

July 23, 2002